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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ekapot Bhunachet

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MR. ERKAPOT BHUNACHET
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IBARAKI, 305-0821,
JAPAN

EXAMINER

ROZANSKI, MICHAEL T

ART UNIT	PAPER NUMBER
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3768

MAIL DATE	DELIVERY MODE
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06/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/936,872

Applicant(s)

BHUNACHET, EKAPOT

Examiner

Michael Rozanski

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 is/are allowed.
- 6) ☒ Claim(s) 35-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 34-40 have been considered but are moot in view of the new ground(s) of rejection. Claim 34 has been allowed. Claims 35-40 stand rejected. Longacre '758 is used to teach the black and white CCD provided inside an endoscope and Alfano et al '556 is used to teach use of a wheel in order to detect different images from different light emissions as a functional equivalent of being able to separate or isolate the detected emissions and thereby get the same end result of at least two different images. MacAulay et al '660 teaches all remaining features. Accordingly, it would have been obvious to combine these teachings to achieve the claimed invention, as reiterated in the following office action.

Claim Objections

2. Claim 40 is objected to because of the following informalities: The claim is improperly dependent upon "any one of claims 34 or 35". In order to expedite prosecution, claim 40 is treated to be dependent upon claim 35. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 35-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over **MacAulay et al** (US 5,590,660) in view of **Longacre** (US 4,535,758) and **Alfano et al** (US 6,665,556).

- MacAulay et al '660 teach all the elements of the current invention including:
 - at least one excitation light emitting system structured and arranged to illuminate the subject matter with excitation light having a plurality of wavelength ranges (col. 10, lines 17-18; referring to the excitation light);
- at least one non-excitation light emitting system structured and arranged to illuminate the subject matter with non-excitation light (col. 10, lines 15-16; referring to the excitation light);
- at least one alternating system structured and arranged to alternate use of said at least one excitation light emitting system and said at least one non-excitation light emitting system (col. 10, lines 15-18; referring to the light source structured to sequentially illuminate the area of interest);
- i) wherein said at least one alternating system is structured and arranged to illuminate the subject matter for first periods of time essentially only by said at least one excitation light emitting system, and
- ii) wherein said alternating system is structured and arranged to illuminate the subject matter for second periods of time by said at least one non-excitation light emitting system (col. 10, lines 15-18; referring to the light source structured to sequentially illuminate the area of interest, or otherwise stated alternating illumination with non-excitation and excitation light over a single cycle);

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- at least one filtering system structured and arranged to prevent transmission of excitation light and permit transmission of non-excitation light (col. 10, lines 18-20; referring to the filtering system permitting transmission of non-excitation red light and blocking all else);
- at least one image sensing system structured and arranged to sense images of the subject matter from light transmitted by said filtering system (col. 10, lines 20-35; referring to the CCD sensor capturing the images. Also since at least two images are detected one from excitation and one from non-excitation, inherently there is differentiation between the two type of images);
- at least one superimposing system structured and arranged to superimpose such images sensed by said image sensing system (col. 10, lines 34-45),
- i) wherein at least one such image sensed during such period of time is superimposed with at least one such image sensed during such second period of time to create at least one such superimposed image (col. 10, lines 35-38); and
- at least one image viewing system structured and arranged to permit viewing such at least one superimposed image (col. 10, lines 38-40 and see display 18 in Figures 5).

MacAulay et al '660 teach the use of three different channels (see col. 8, lines 21-35).

MacAulay et al '660 further teach an RGB color monitor (see col. 10, lines 16-45).

While MacAulay et al '660 do not teach an adjuster filter to adjust for intensity of either excitation or non-excitation light, MacAulay et al '660 teach the creation of a

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remittance light image to account for image non-uniformity caused by changes in illumination intensity (see abstract), and thereby constituting an alternative functional equivalent resulting the same end result of adjustment of variation of the intensity of light.

MacAulay et al '660 do not expressly teach the use of a black and white CCD. In the same field of endeavor, Longacre'758 teaches the use of a black and white CCD in an endoscope (see col. 1, lines 10-28). It would have been obvious to one skilled in the art at the time that the invention was made to have used the black and white CCD in the endoscope of MacAulay et al '660 allowing accessibility in confined regions because of its small size (see in Longacre'758 for motivation to combine col. 1, lines 10-16).

MacAulay et al '660 do not explicitly teach the use of a rotating disc or a wheel as alternatively well known to skilled artisans, to filter different light wavelengths. In the same field of endeavor, Alfano et al '556 teach the use of a wheel in order to detect different images from different light emissions (see col. 12, lines 52-67 and col. 13, lines 1-29). It would have been obvious to one skilled in the art at the time that the invention was made to have used the rotating disc or wheel as taught by Alfano et al '556 in the invention as taught by MacAulay et al '660 as a functional equivalent of being able to separate or isolate the detected emissions and thereby get the same end result of at least two different images.

While MacAulay et al '660 do not teach an adjuster filter to adjust for intensity of different light wavelengths, MacAulay et al '660 teach the creation of a remittance light

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image to account for image non-uniformity caused by changes in illumination intensity (see abstract), and thereby constituting an alternative functional equivalent resulting the same end result of adjustment of variation of the intensity of light.

Allowable Subject Matter

5. Claim 34 is allowed in view of the current amendment.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rozanski whose telephone number is 571-272-1648. The examiner can normally be reached on Monday - Friday, 8-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MR

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